ZHONE

8965, 8968, 8975, and 8985 Access Cards
Installation Instructions

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Zhone Technologies
@Zhone Way
7001 Oakport Street
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Access Cards

The Models 8965, 8968, 8975, and 8985 access cards are circuit boards mounted in an 8620 or 8820 Broadband Loop Carrier (BLC), used to transport Asynchronous Transfer Mode (ATM) cells at high speeds over a single twisted-pair connection or, optionally, two twisted-pair connections (8985 only). They must be used in conjunction with a Shelf Concentration and Processing (SCP) card, which is used to configure and monitor the access cards.

- Models 8965-B2 and 8968 support Asymmetric Digital Subscriber Line (ADSL), ADSL2, and ADSL2+ concurrent with POTS. The Model 8965 has 24 DSL ports and the Model 8968 has 48 ports.
- Model 8975 supports ADSL or ReachDSL® 2.2 on a port-by-port basis depending on the capabilities of the line and endpoint. This feature is known as ReachDSL+.
- Model 8985-B2 supports 2-wire and 4-wire Single-pair High-speed Digital Subscriber Line (SHDSL).

Product Documentation Online

Complete documentation for this product is available at **www.zhone.com**.

Document Title
Hotwire Central Office Universal POTS Splitter, Models 6050 and 7020, Installation Instructions
Hotwire ReachDSL Modem, Model 6390 with Inline Phone Filter, Installation Instructions
Shelf Concentration and Processing (SCP) Card with ATM Uplink User's Guide
Shelf Concentration and Processing (SCP) Card with IP Uplink User's Guide
Shelf Concentration and Processing (SCP) Card Installation Instructions
8620 Broadband Loop Carrier Installation Guide
8820 Broadband Loop Carrier Installation Guide
Model 8965, 8968, 8975, and 8985 Access Cards User's Guide
8820 Front Cable Management Bracket Installation Instructions

Installation Overview

Before installing the access card, verify:

- That you have obtained the applicable cables; refer to *Cables You Need*.
- That the 8620 or 8820 Broadband Loop Carrier (BLC) is installed and power is supplied to the chassis.

Installation of the access card consists of:

- Installing the card in the BLC.
- Connecting to a Main Distribution Frame (MDF).
- Connecting to the uplink.
- Configuring your unit using the web interface. Refer to the SCP card's online Help and the *Model 8965, 8968, 8975, and 8985 Access Cards User's Guide* for detailed configuration procedures.

Cables You Need

The following standard cables are used with this product:

- **For the DSL network connection:** Plug-ended Telco 50-pin cable for connection from the BLC rear connector to the MDF or other demarcation point. Refer to the appropriate BLC Installation Guide and, if applicable, the documentation that came with your POTS splitter for more information.

  For Model 8968 cards, two cables are required.

- **For the uplink:** Refer to the *Shelf Concentration and Processing (SCP) Card with ATM Uplink User's Guide* or *Shelf Concentration and Processing (SCP) Card with IP Uplink User's Guide* for cable specification information.

For more information refer to *Connector Pin Assignments* in the *Model 8965, 8968, 8975, and 8985 Access Cards User's Guide*.

Installing the Cards in a BLC

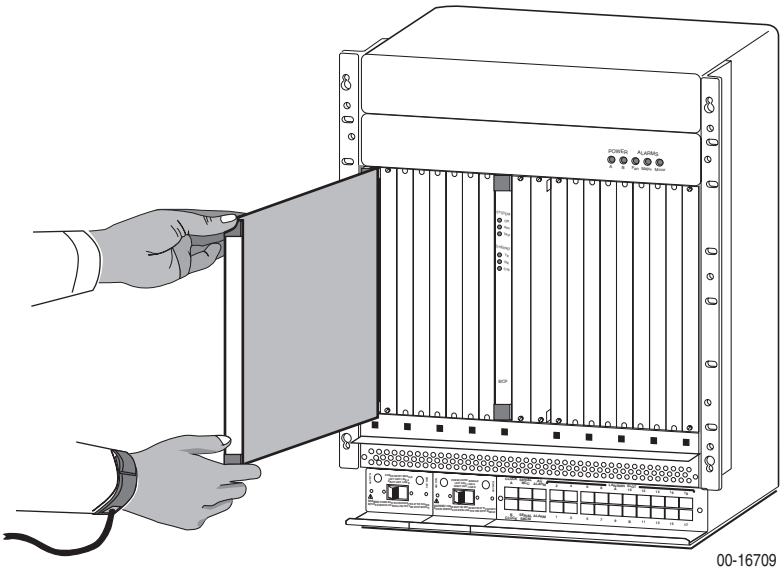
⚠ HANDLING PRECAUTIONS FOR STATIC-SENSITIVE DEVICES

This product is designed to protect sensitive components from damage due to electrostatic discharge (ESD) during normal operation. When performing installation procedures, however, take proper static control precautions to prevent damage to equipment. If you are not sure of the proper static control precautions, contact your nearest sales or service representative.

An access card can be installed in, removed from, and replaced in a BLC without disrupting service to the other cards in the chassis.

To install the access card:

1. Determine in which slot the unit will be installed. Verify that cards in adjacent slots have been fastened.
2. Remove the filler plate from the installation slot and store for possible later use.
3. Holding the access card with the component side facing up (8620 BLC) or facing right (8820 BLC), insert it into the card guides.



00-16709

CAUTION:

Do not force the unit into the slot. This could damage the backplane connectors. If the card does not seat properly, remove the card and reinstall it. If it still does not seat properly, call your service representative.

4 Slide the unit into the slot until the power and network connectors seat firmly in the mating connectors on the backplane.

   The unit performs a power-on self-test. All of the LEDs turn ON and OFF briefly. When the self-test is completed successfully, the SYSTEM OK LED begins to pulse.

   If the LED is not pulsing, notify your service representative.

5 Secure the unit by fastening the screws at each end of the faceplate.

Connecting to the ATM or IP Network

The connection to the ATM or IP network is made through the Shelf Concentration and Processing (SCP) card in the BLC. Depending on the model, the SCP card supports an OC3/STM1, E1 IMA, DS1 IMA, or Gigabit Ethernet uplink. See the *Shelf Concentration and Processing (SCP) Card Installation Instructions* for more information.

Connecting 24-Port Models to an MDF or POTS Splitter

You can connect 24-port access cards to an MDF or other demarcation point through the BLC. Do not connect the Model 8985 to a POTS splitter. Refer to the appropriate BLC Installation Guide for more information.

Refer to *Connector Pin Assignments* in the *Model 8965, 8968, 8975, and 8985 Access Cards User's Guide* for pinouts of the BLC ports.

Fastening the Cable with Cable Ties

To fasten the Telco connector to the chassis using the provided cable ties:

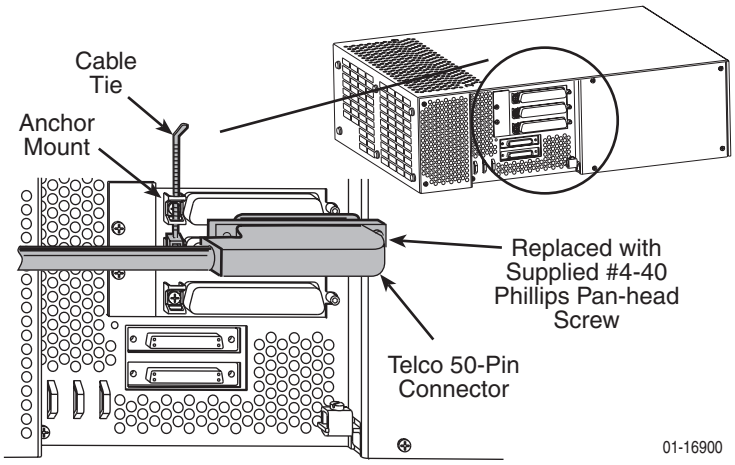
1 Replace the longer captive screw on the cable connector with the #4-40 Phillips pan-head screw shipped in a plastic bag with the BLC.

2 Locate the connector on the back of the chassis that corresponds with the slot where you installed the access card. Connectors are labeled 2 and 3 on the 8620 chassis, and 1–18 on the 8820 chassis.

3 Plug the Telco 50-pin cable into the appropriate connector.

4 Thread the provided cable tie through the anchor mount on the end of the connector where the cable will lie. Tighten the cable tie around the connector and cut off any excess.

5 Secure the other end of the Telco 50-pin cable by tightening the captive pan-head screw.



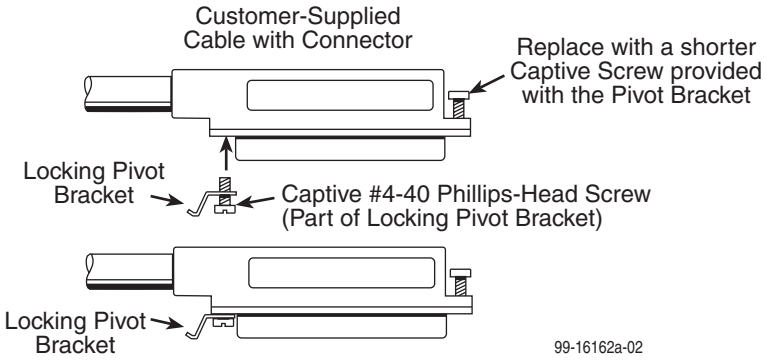
6 If a ferrite choke is supplied with your access card, clamp it around the cable as close as possible to the chassis. If it fits loosely around the cable, fasten it with a cable tie.

Fastening a Cable with Locking Pivot Brackets

To fasten a Telco connector to the chassis with locking pivot brackets:

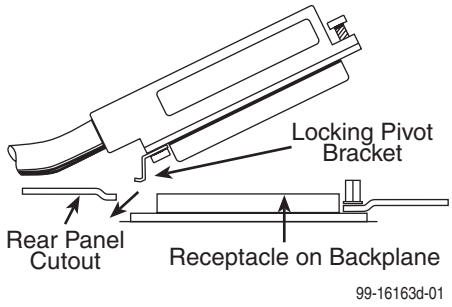
1 Replace the longer captive screw on the cable connector with the #4-40 Phillips pan-head screw shipped in a plastic bag with the BLC.

2 Install the locking pivot bracket onto the cable end of the connector using the captive screw, as illustrated below.


Customer-Supplied Cable with Connector
Replace with a shorter Captive Screw provided with the Pivot Bracket
Locking Pivot Bracket
Captive #4-40 Phillips-Head Screw (Part of Locking Pivot Bracket)
Locking Pivot Bracket
99-16162a-02

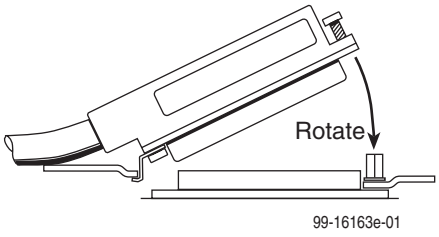
3 Locate the connector on the back of the chassis that corresponds with the slot where you installed the access card. Connectors are labeled 2 and 3 on the 8620 chassis, and 1–18 on the 8820 chassis.

4 Insert the bottom edge of the locking pivot bracket inside the lower edge of the rear panel cutout next to that connector.

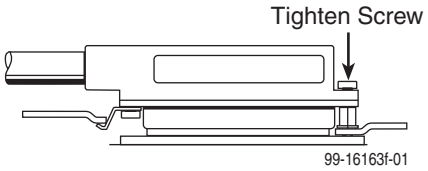


5 Align the two connectors.

6 Rotate the connector until it is fully seated.



7 Tighten the captive screw on the top of the cable's connector.



8 If a ferrite choke is supplied with your access card, clamp it around the cable as close as possible to the chassis. If it fits loosely around the cable, fasten it with a cable tie.

Connecting a 24-Port Card to the MDF

To connect the BLC containing the card to an MDF:

1. Connect the cable to the chassis as described in *Fastening the Cable with Cable Ties* on page 7 or *Fastening a Cable with Locking Pivot Brackets* on page 8.
2. Dress the cable to the side the connector is nearest.
3. *For a Model 8965, 8975, or 8985 with no POTS service:*

   — Attach the other end of the cable to the appropriate MDF or demarcation point. A converter may be necessary for terminating the other end of the cable on a punchdown block before cross-connecting to an MDF.

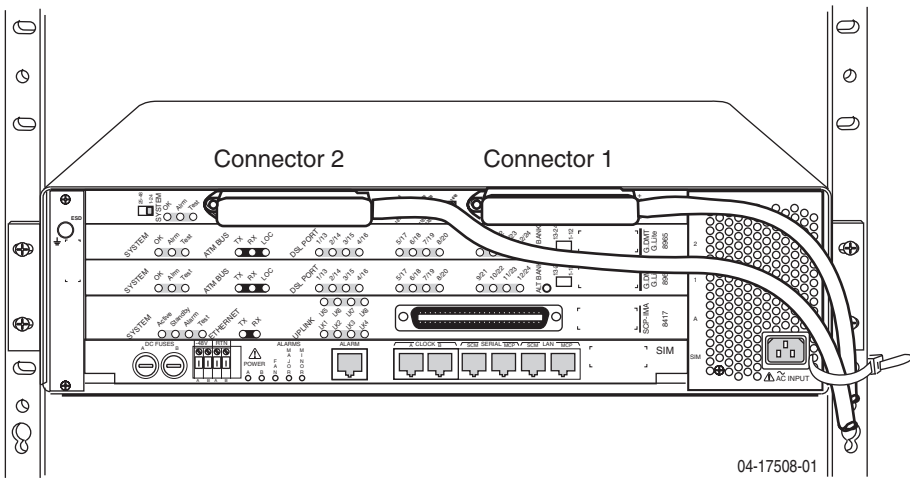
   For a Model 8965 or 8975 using an ADSL POTS splitter:

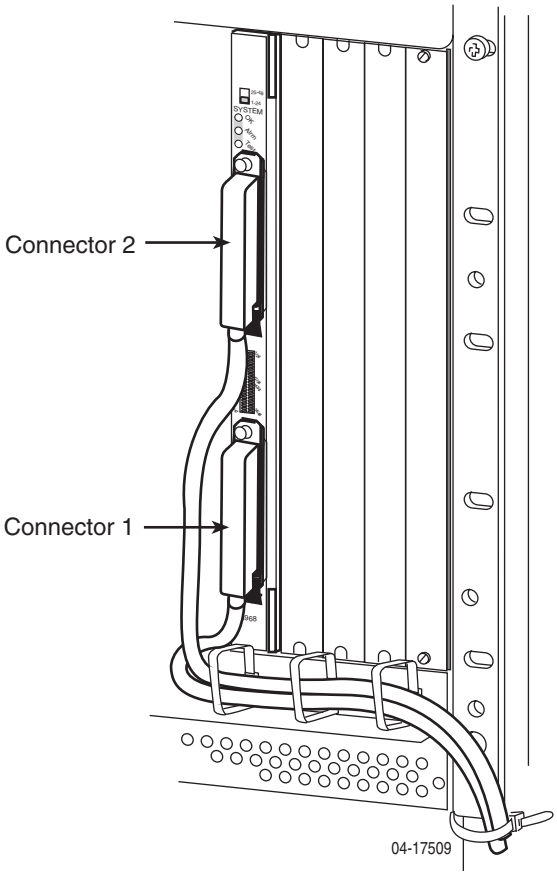
   — Attach the other end of the cable to the DSL interface of the POTS splitter. Refer to the document that came with the POTS splitter for the additional connections.

Connecting 48-Port Models to an MDF or POTS Splitter

Connect a 48-port access card such as the Model 8968 to an MDF or other demarcation point using the connectors on the faceplate of the card.

- Connect a cable to the bottom (8820) or right (8620) connector on the card's faceplate for DSL ports 1–24.
- Connect a cable to the top (8820) or left (8620) connector on the card's faceplate for DSL ports 25–48.

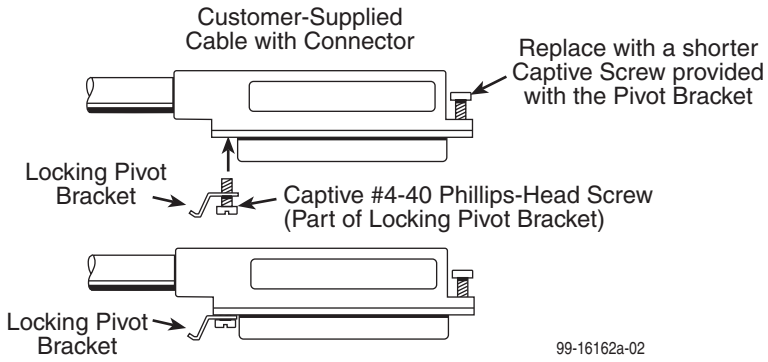




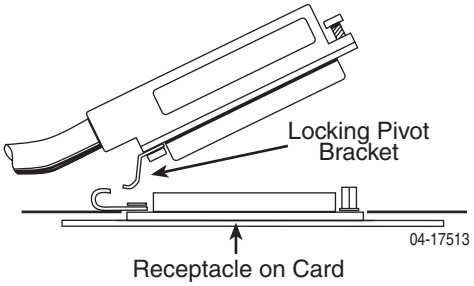
Refer to *Connector Pin Assignments* in the *Model 8965, 8968, 8975, and 8985 Access Cards User's Guide* for pinouts of the access card connectors.

To connect each receptacle of a 48-port access card to an MDF or POTS splitter:

1. Replace the longer captive screw on your cable connector with the #4-40 Phillips pan-head screw shipped in a plastic bag with the BLC.
2. Install the locking pivot bracket onto the cable end of the connector using the captive screw, as illustrated below.

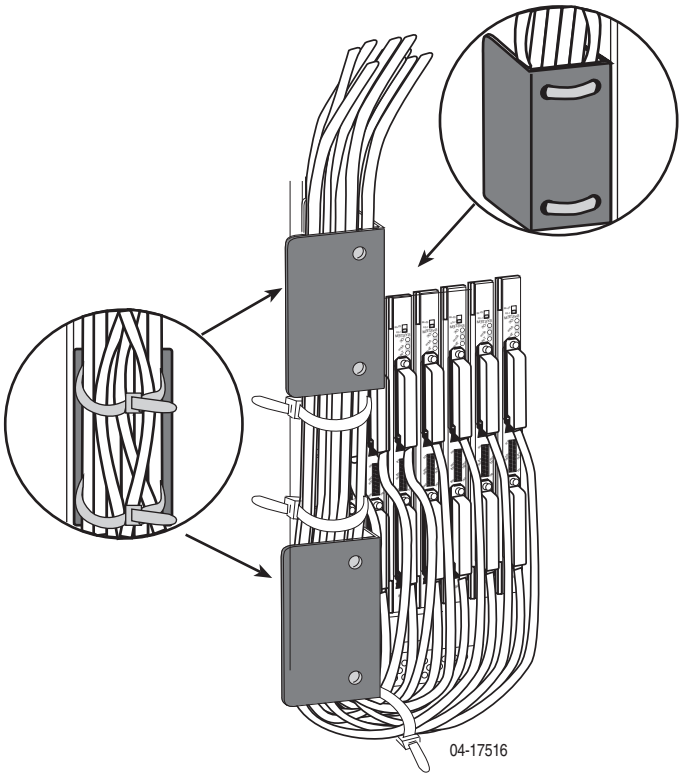


3. Insert the bottom edge of the locking pivot bracket into the hook next to the receptacle.



4. Align the two connectors and press the cable connector onto the receptacle.
5. Tighten the captive screw on the top of the cable's connector.

6 Dress the cables toward the nearest rail and fix them with cable ties. Optionally, use front cable management brackets (feature number PDN-8900-F1-001) to hold and direct the cables, as shown below. See the *8820 Front Cable Management Bracket Installation Instructions* for more information.



7 If ferrite chokes are supplied with your access card, clamp them around the cables as close as possible to the card. If they fit loosely around the cables, fasten them with cable ties.

8 For a card without POTS service, attach the other ends of the cables to the appropriate MDF or demarcation point. A converter may be necessary for terminating the other end of the cables on a punchdown block before cross-connecting to an MDF.

For a card with POTS service, attach the other ends of the cables to the DSL interface of your POTS splitter. Refer to the document that came with the POTS splitter for the additional connections.

Front Panel LEDs (Models 8965, 8975, and 8985)

The following table describes the meaning and states of the LEDs on the front panel of the Model 8965, 8975, and 8985 access cards.

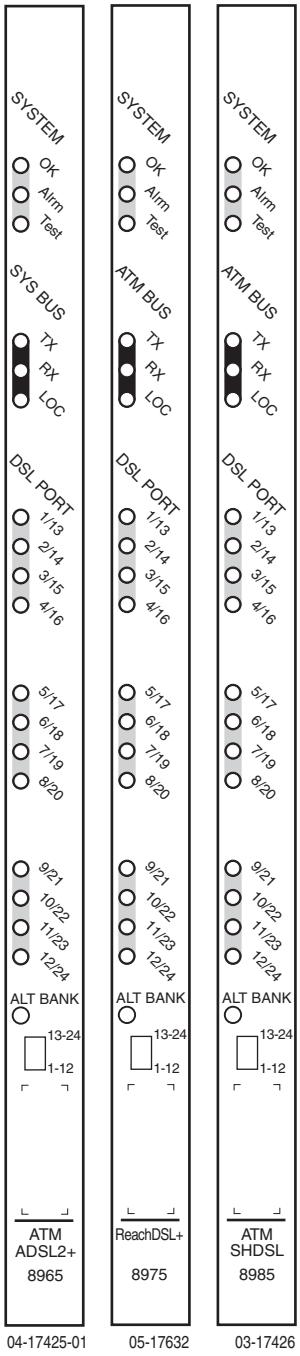


Table 1: Model 8965, 8975, and 8985 LEDs (1 of 2)

Type	LED	LED is . . . [a]	Indicating . . .
SYSTEM	OK	Green, On	Card failure. System processing functions have stopped.
		Off	No power to card.
		Green, Pulsing	Card functioning normally.
		Green, Fast Blinking	Firmware download needed.
	Alrm	Amber, On	Alarm is present on the card. ATM interface is not being detected.
		Off	Normal operation, no alarms.
	Test	Amber, On	Test in progress.
		Off	Normal operation, no tests.
		Amber, Fast Blinking	Self-test is in progress.
ATM BUS or SYS BUS	TX	Off	Inactive.
		Green, Fast Blinking	Cells are being transmitted.
	RX	Off	Inactive, link down.
		Green, Fast Blinking	Cells are being received.
	LOC	Amber, On	Loss Of Clock. ATM bus clock signal is not present.
		Off	Normal operation.
DSL PORT	1–12 13–24	Green, On	Good signal, unit is trained.
		Off	Port is disabled.
		Green, Slow Blinking	Port is in test, or is down.
		Green, Fast Blinking	Port is training.

Table 1: Model 8965, 8975, and 8985 LEDs (2 of 2)

Type	LED	LED is . . . [a]	Indicating . . .
ALT BANK		Off	The ports not currently displayed by the port status LEDs are functioning normally or are disabled.
		Amber, Fast Blinking	One of the ports not currently being displayed by the port status LEDs is down, in test, or in training mode.

a. Pulsing: LED turns off momentarily once per second.
Slow Blinking: LED turns on momentarily once per second.
Fast Blinking: LED turns off and on in equal duration 4 times per second.

Front Panel LEDs (Model 8968)

The following table describes the meaning and states of the LEDs on the front panel of the Model 8968 access card. The card has 24 LEDs to show the state of DSL ports. Depending on the setting of the switch on the face of the card, the LEDs reflect the state of ports 1–24 or 25–48.

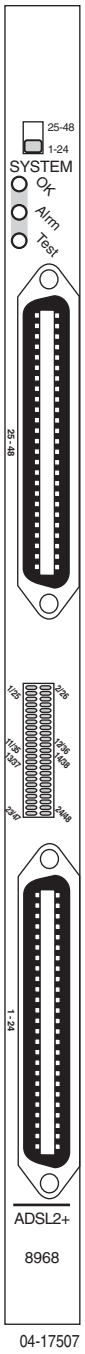


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Table 2: Model 8968 LEDs

Type	LED	LED is . . . [a]	Indicating . . .
SYSTEM	OK	Green, On	Card failure. System processing functions have stopped.
		Off	No power to card.
		Green, Pulsing	Card functioning normally.
		Green, Fast Blinking	Firmware download needed.
	Alrm	Amber, On	Alarm is present on the card. ATM interface is not being detected.
		Off	Normal operation, no alarms.
	Test	Amber, On	Test in progress.
		Off	Normal operation, no tests.
		Amber, Fast Blinking	Self-test is in progress.
DSL PORT	1–24 25–48	Green, On	Good signal, unit is trained.
		Off	Port is disabled.
		Green, Slow Blinking	Port is in test, or is down.
		Green, Fast Blinking	Port is training.

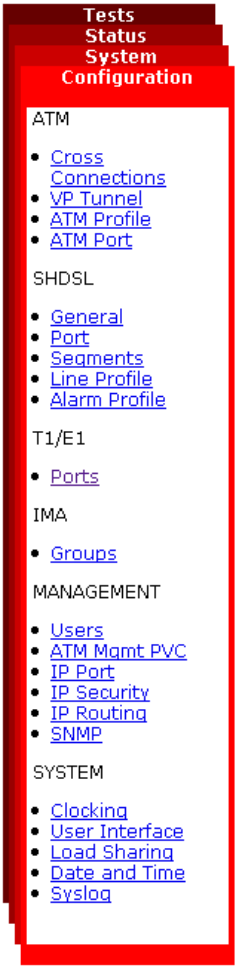
a. Pulsing: LED turns off momentarily once per second.
Slow Blinking: LED turns on momentarily once per second.
Fast Blinking: LED turns off and on in equal duration 4 times per second.

Logging In to the BLC

To access the web interface:

1. Open your web browser. (Internet Explorer Version 6 or above is recommended.)
2. Type http:// and the IP address of the SCP card into the Address field of your browser window. The default IP address is 10.10.10.10:

3. A login window appears. Enter the User ID and Password, and click on OK. The web interface screen appears.
4. Click on the Configuration menu tab. The configuration screens listed depend on the types of access cards and SCP card installed in the chassis.



Configuration

The following table shows the web interface Configuration screens most likely to require modification, along with some fields found on each screen. Refer to the online Help for more information.

Models 8955 and 8975	Models 8965 and 8968	Model 8985
DSL • Line Profile – Latency – Max Rate – Min Rate – Max Additional Noise Margin – Min Noise Margin – Target Noise Margin – Rate Adaptive Mode • General – Spectrum Management • Port – Line Circuit Name – Line Code – Line Profile Name – Alarm Profile Name – Max Tx Power – Far End Max Tx Power – POTS Detection Voltage – Status	DSL • Line Profile – Latency – Max Rate – Min Rate – Max Additional Noise Margin – Min Noise Margin – Target Noise Margin – Rate Adaptive Mode • General – Spectrum Management • Port – Line Circuit Name – Line Code – Line Profile Name – Alarm Profile Name – ADSL2 PSD Profile – ADSL2+ PSD Profile – Power Management – Power Management Status Enabling – L0 and L2 Time – Status	SHDSL • Line Profile – Profile Name – Max Rate – Min Rate – Annex – Remote Management – Reference Clock – Target Margin – Wire Pair • General – Spectrum Management – Spectrum Management Region • Port – Line Circuit Name – Line Profile Name – Span Alarm Profile Name – Equivalent Working Length – Status
ATM • Cross Connections – By Port – By Slot	ATM • Cross Connections – By Port – By Slot	ATM • Cross Connections – By Port – By Slot

Contacting Global Service and Support

Contact Global Service and Support (GSS) if you have any questions about this or other Zhone products. Before contacting GSS, make sure you have the following information:

- Zhone product you are using
- System configuration
- Software version running on the system
- Description of the issue

Technical Support

If you require assistance with the installation or operation of your product, or if you want to return a product for repair under warranty, contact GSS. The contact information is as follows:

E-mail	support@zhone.com
Telephone (North America)	877-ZHONE20
Telephone (International)	510-777-7133
Internet	www.zhone.com/support

If you purchased the product from an authorized dealer, distributor, Value Added Reseller (VAR), or third party, contact that supplier for technical assistance and warranty support.

Service Requirements

If the product malfunctions, all repairs must be performed by the manufacturer or a Zhone-authorized agent. It is the responsibility of users requiring service to report the need for service to GSS.

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